# *AT-FS709*

*10/100 Fast Ethernet Unmanaged Switch*

# *Installation Guide*

PN 613-10759-00 Rev. A

# *Electrical Safety and Installation Requirements*

**STANDARDS**: This product meets the following standards

### U.S. Federal Communications Commission

**RADIATED ENERGY**

Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and , if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note: Modifications or changes not expressly approved of by the manufacturer or the FCC, can void your right to operate this equipment.

### Canadian Department of Communications

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

**WARNING**: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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| RFI Emission | EN55022 Class A |

**WARNING**: This product requires shielded cables to comply with Class A emission limits. If not used with shielded cables, this product may cause radio interference in which case the user may be required to take adequate measures.

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| Immunity | EN50082-1 |

**SAFETY**
**ELECTRICAL NOTICES**
**WARNING:** ELECTRIC SHOCK HAZARD
To prevent ELECTRIC shock , do not remove cover. No user-serviceable parts inside. This unit contains HAZARDOUS VOLTAGES and should only be opened by a trained and qualified technician. To avoid the possibility of ELECTRIC SHOCK disconnect electric power to the product before connecting or disconnecting the LAN cables.

**LIGHTNING DANGER**
**DANGER:** DO NOT WORK on equipment or CABLES during periods of LIGHTNING ACTIVITY.

**INSTALLATION**

**ELECTRICAL—AUTO VOLTAGE ADJUSTMENT**
This product will automatically adjust to any voltage between the ranges shown on the label.

**ELECTRICAL—TYPE CLASS 1 EQUIPMENT**
THIS EQUIPMENT MUST BE EARTHED. Power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.

**ELECTRICAL—CORD NOTICE**
Use power cord, maximum 4.5 meters long, rated 6 amp minimum, 250V, made of HAR cordage molded IEC 320 connector on one end and on the other end a plug approved by the country of end use.

**CAUTION**: Air vents must not be blocked and must have free access to the room ambient air for cooling.

**OPERATING TEMPERATURE**
This product is designed for a maximum ambient temperature of 40 degrees C.

**ALL COUNTRIES**: Install product in accordance with local and National Electrical Codes.

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**NORMEN**: Dieses Produkt erfüllt die Anforderungen der nachfolgenden Normen.

**WARNUNG**: Bei Verwendung zu Hause kann dieses Produkt Funkstörungen hervorrufen. In diesem Fall müßte der Anwender angemessene Gegenmaßnahmen ergreifen.

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| Hochfrequenzstörung | EN55022 Klasse A |

**WARNUNG**: Dieses Produkt muß mit entstörten Kabeln versehen sein, damit es den Emissionsgrenzen der Klasse A entspricht. Wenn dieses Produkt nicht mit entstörten Kabeln verwendet wird, könnte es Funkstörungen hervorrufen; der Anwender müßte in diesem Fall angemessene Gegenmaßnahmen ergreifen.

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| Störsicherheit | EN50082-1 |

**SICHERHEIT**
**ACHTUNG**: GEFÄHRLICHE SPANNUNG
Das Gehäuse nicht öffnen. Das Gerät enthält keine vom Benutzer wartbaren Teile. Das Gerät steht unter Hochspannung und darf nur von qualifiziertem technischem Personal geöffnet werden. Vor Anschluß der LAN-Kabel, Gerät vom Netz trennen.

**GEFAHR DURCH BLITZSCHLAG**
**GEFAHR**: Keine Arbeiten am Gerät oder an den Kabeln während eines Gewitters ausführen.

**INSTALLATION**

**AUTOMATISCHE SPANNUNGSEINSTELLUNG**
Dieses Gerät stellt sich automatisch auf die auf dem Etikett aufgeführten Spannungswerte ein.

**GERÄTE DER KLASSE 1**
**DIESE GERÄTE MÜSSEN GEERDET SEIN.** Der Netzstecker darf nur mit einer vorschriftsmäßig geerdeten Steckdose verbunden werden. Ein unvorschriftsmäßiger Anschluß kann die Metallteile des Gehauses unter gefährliche elektrische Spannungen setzen.

**NETZKABEL**

Das Netzkabel sollte eine maximale Länge von 4,5 Metern, einen Nennwert von mindestens 6 A und 250 V haben, aus HAR-Material hergestellt und mit einer gepreßten, IEC 320 entsprechenden, Anschlußverbindung an einem Ende, und am anderen Ende mit einem im Land des Endverbrauchers geprüften Stecker ausgestattet sein.

**VORSICHT**
Die Entlüftungsöffnungen dürfen nicht versperrt sein und müssen zum Kühlen freien Zugang zur Raumluft haben.

**BETRIEBSTEMPERATUR**
Dieses Produkt wurde für den Betrieb in einer Umgebungstemperatur von nicht mehr als 40° C entworfen.

**ALLE LÄNDER**: Installation muß örtlichen und nationalen elektrischen Vorschriften entsprechen.

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**STANDARDER**: Dette produkt tilfredsstiller de følgende standarder.

**ADVARSEL**: I et hjemligt miljø kunne dette produkt forårsage radio forstyrrelse. Bliver det tilfældet, påkræves brugeren muligvis at tage tilstrækkelige foranstaltninger.

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| Radiofrekvens forstyrrelsesemission | EN55022 Klasse A |

**ADVARSEL**: Der skal bruges skærmkabler med dette produkt for at opfylde Klasse A emissionsgrænser. Hvis skærmkabler ikke bruges, kan dette produkt muligvis forårsage radio forstyrrelse. Bliver dette tilfældet, påkræves brugeren muligvis at tage tilstrækkelige foranstaltninger.

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| Immunitet | EN50082-1 |

**SIKKERHED**
**ELEKTRISKE FORHOLDSREGLER**
**ADVARSEL**: RISIKO FOR ELEKTRISK STØD
For at forebygge ELEKTRISK stød, undlad at åbne apparatet. Der er ingen indre dele, der kan repareres af brugeren. Denne enhed indeholder LIVSFARLIGE STRØMSPÆNDINGER og bør kun åbnes af en uddannet og kvalificeret tekniker. For at undgå risiko for ELEKTRISK STØD, afbrydes den elektriske strøm til produktet, før LAN-kablerne monteres eller afmonteres.

**FARE UNDER UVEJR**
**FARE**: UNDLAD at arbejde på udstyr eller KABLER i perioder med LYNAKTIVITET.

**INSTALLATION**

**ELEKTRISK—AUTOMATISK SPÆNDINGSREGULERING**
Dette apparat vil automatisk tilpasse sig enhver spænding indenfor de værdier, der er angivet på etiketten.

**ELEKTRISK—KLASSE 1-UDSTYR**
DETTE UDSTYR KRÆVER JORDFORBINDELSE. Stikket skal være forbundet med en korrekt installeret jordforbunden stikkontakt. En ukorrekt installeret stikkontakt kan sætte livsfarlig spænding til tilgængelige metaldele.

**ELEKTRISK—EDNING**
Anvend ledning af maksimum 4,5 meters længde, med en kapacitet på minimum 6 amp., 250 v, bestående af en IEC 320 connector med indstøbt HAR ledning i den ene ende og et stik i den anden ende, der er godkendt af myndighederne i brugerlandet.

**ADVARSEL**: Ventilationsåbninger må ikke blokeres og skal have fri adgang til den omgivende luft i rummet for afkøling.

**BETJENINGSTEMPERATUR**
Dette apparat er konstrueret til en omgivende temperatur på maksimum 40 grader C.

**ALLE LANDE**: Installation af produktet skal ske i overensstemmelse med lokal og national lovgivning for elektriske installationer.

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**EISEN**: Dit product voldoet aan de volgende eisen.

**WAARSCHUWING**: Binnenshuis kan dit product radiostoring veroorzaken, in welk geval de gebruiker verplicht kan worden om gepaste maatregelen te nemen.

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| RFI Emissie | EN55022 Klasse A |

**WAARSCHUWING**: Dit product vereist beschermende kabels in overeenstemming met de limieten van Klasse A emissie. Als het niet met beschermende kabels wordt gebruikt, kan dit produkt radiostoring veroorzaken, in welk geval de gebruiker verplicht kan worden om gepaste maatregelen te nemen.

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| Immuniteit | EN50082-1 |

**VEILIGHEID**
**WAARSCHUWINGEN MET BETREKKING TOT ELEKTRICITEIT**
**WAARSCHUWING**: GEVAAR VOOR ELEKTRISCHE SCHOKKEN
Verwijder het deksel niet, teneinde ELEKTRISCHE schokken te voorkomen. Binnenin bevinden zich geen onderdelen die door de gebruiker onderhouden kunnen worden. Dit toestel staat onder GEVAARLIJKE SPANNING en mag alleen worden geopend door een daartoe opgeleide en bevoegde technicus. Om het gevaar op ELEKTRISCHE SCHOKKEN te vermijden, moet u het toestel van de stroombron ontkoppelen alvorens de LAN-kabels te koppelen of ontkoppelen.

**GEVAAR VOOR BLIKSEMINSLAG**
**GEVAAR**: NIET aan toestellen of KABELS WERKEN bij BLIKSEM.\

**INSTALLATIE**

**ELEKTRISCH: AUTOMATISCHE AANPASSING VAN DE SPANNING**
Dit toestel past zich automatisch aan elke spanning aan, tussen de op het label vermelde waarden.

**ELEKTRISCHE TOESTELLEN VAN KLASSE 1**
DIT TOESTEL MOET GEAARD WORDEN. De stekker moet aangesloten zijn op een juist geaarde contactdoos. Een onjuist geaarde contactdoos kan de metalen onderdelen waarmee de gebruiker eventueel in aanraking komt onder gevaarlijke spanning stellen.

**ELEKTRISCHE SNOEREN**
Gebruik een elektrisch snoer, maximum 4,5 meter lang, berekend voor ten minste 6 ampåçère, 250 V, uit HAR vervaardigd, met aan het ene uiteinde een gevormd IEC 320 aansluitstuk en aan het andere uiteinde een stekker die goedgekeurd is door het land waar het toestel gebruikt zal worden.

**OPGELET**: De ventilatiegaten mogen niet worden gesperd en moeten de omgevingslucht ongehinderd toelaten voor afkoeling.

**BEDRIJFSTEMPERATUUR**
De omgevingstemperatuur voor dit produkt mag niet meer bedragen dan 40 graden Celsius.

**ALLE LANDEN**: het toestel installeren overeenkomstig de lokale en nationale elektrische voorschriften.

**NORMES**: ce produit est conforme aux normes de suivantes :

**MISE EN GARDE**: dans un environnement domestique, ce produit peut provoquer des interférences radioélectriques. Auquel cas, l'utilisateur devra prendre les mesures adéquates.

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| Emission d'interférences radioélectriques | EN55022 Classe A |

**MISE EN GARDE** : conformément aux limites d'émission de la Classe A, ce produit doit être utilisé avec des câbles blindés. Si ce produit n'est pas utilisé avec des câbles blindés, il peut émettre des interférences radioélectriques. Auquel cas, l'utilisateur devra prendre les mesures adéquates.

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| Immunité | EN50082 - 1 |

**SÉCURITÉ**
**INFORMATION SUR LES RISQUES ÉLECTRIQUES**
**AVERTISSEMENT:** DANGER D'ÉLECTROCUTION
Pour éviter toute ÉLECTROCUTION, ne pas ôter le revêtement protecteur du matériel. Ce matériel ne contient aucun élément réparable par l'utilisateur. Il comprend des TENSIONS DANGEREUSES et ne doit être ouvert que par un technicien dûment qualifié. Pour éviter tout risque d'ÉLECTROCUTION, débrancher le matériel avant de connecter ou de déconnecter les câbles LAN.

**DANGER DE FOUDRE**
**DANGER**: NE PAS MANIER le matériel ou les CÂBLES lors d'activité orageuse.

**INSTALLATION**

**RÉGLAGE DE TENSION AUTOMATIQUE ÉLECTRIQUE**
Ce matériel peut s'ajuster automatiquement sur n'importe quelle tension comprise dans la plage indiquée sur l'étiquette.

**ÉQUIPEMENT DE CLASSE 1 ÉLECTRIQUE**
CE MATÉRIEL DOIT ÊTRE MIS A LA TERRE. La prise de courant doit être branchée dans une prise femelle correctement mise à la terre car des tensions dangereuses risqueraient d'atteindre les pièces métalliques accessibles à l'utilisateur.

**INFORMATION SUR LE CORDON ÉLECTRIQUE**
Utiliser un cordon secteur de 4.5 mètres de long maximum, calibré à 6 ampères minimum, 250V, fabriqué en câblage HAR avec connecteur IEC 32C moulé à une extrémité, et à l'autre extrémité, une prise de courant mâle répondant aux normes du pays d'utilisation.

**ATTENTION**: Ne pas bloquer les fentes d'aération, ceci empêcherait l'air ambiant de circuler librement pour le refroidissement.

**TEMPÉRATURE DE FONCTIONNEMENT**
Ce matériel est capable de tolérer une température ambiante maximum de 40 degrés Celsius.

**POUR TOUS PAYS** : Installer le matériel conformément aux normes électriques nationales et locales.

**STANDARDIT**: Tämä tuote on seuraavien standardien mukainen.

**VAROITUS**: Kotiolosuhteissa tämä laite voi aiheuttaa radioaaltojen häiröitä, missä tapauksessa laitteen käyttäjän on mahdollisesti ryhdyttävä tarpeellisiin toimenpiteisiin.

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| Radioaaltojen häirintä | EN55022 Luokka A |

**VAROITUS**: Tämä tuote vaatii suojatut kaabelit täyttääkseen A Luokan säteilyrajoitukset. Ellei suojattuja kaapeleita käytetä, tämä laite voi aiheuttaa radioaaltohäriöitä, missä tapauksessa laitteen käyttäjän on mahdollisesti ryhdyttävä tarpeellisiin toimenpiteisiin.

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| Kestävyys | EN50082-1 |

**TURVALLISUUS**
**SÄHKÖÖN LIITTYVIÄ HUOMAUTUKSIA**
**VAROITUS**: SÄHKÖISKUVAARA
Estääksesi SÄHKÖISKUN älä poista kantta. Sisällä ei ole käyttäjän huollettavissa olevia osia. Tämä laite sisältää VAARALLISIA JÄNNITTEITÄ ja sen voi avata vain koulutettu ja pätevä teknikko. Välttääksesi SÄHKÖISKUN mahdollisuuden katkaise sähkövirta tuotteeseen ennen kuin liität tai irrotat paikallisverkon (LAN) kaapelit.

**SALAMANISKUVAARA**
**HENGENVAARA**: ÄLÄ TYÖSKENTELE laitteiden tai KAAPELEIDEN KANSSA SALAMOINNIN AIKANA.

**ASENNUS**

**SÄHKÖ—AUTOMAATTINEN JÄNNITTEENSÄÄTÖ**
Tämä tuote säätää automaattisesti mihin tahansa jännitteeseen ohjetarrassa annettujen arvojen välillä.

**SÄHKÖ—TYYPPILUOKAN 1 LAITTEET**
TÄMÄ LAITE TÄYTYY MAADOITTAA. Pistoke täytyy liittää kunnollisesti maadoitettuun pistorasiaan. Virheellisesti johdotettu pistorasia voi altistaa metalliosat vaarallisille jännitteille.

**SÄHKÖ—JOHTOON LIITTYVÄ HUOMAUTUS**
Käytä seuraavanlaista virtajohtoa: maksimipituus 4,5 metriä, minimiteho 6 ampeeria, 250 V, valmistettu HAR-johdostosta, muovattu IEC 320 -liitin toisessa päässä ja käyttömaassa hyväksytty pistoke toisessa päässä.

**HUOMAUTUS**: Ilmavaihtoreikiä ei pidä tukkia ja niillä täytyy olla vapaa yhteys ympäröivään huoneilmaan, jotta ilmanvaihto tapahtuisi.

**KÄYTTÖLÄMPÖTILA**
Tämä tuote on suunniteltu ympäröivän ilman maksimilämpötilalle 40°C.

**KAIKKI MAAT**: Asenna tuote paikallisten ja kansallisten sähköturvallisuusmääräysten mukaisesti.

**STANDARD**: Questo prodotto è conforme ai seguenti standard.

**AVVERTENZA**: in ambiente domestico questo prodotto potrebbe causare radio interferenza. In questo caso potrebbe richiedersi all'utente di prendere gli adeguati provvedimenti.

Emissione RFI (interferenza di radiofrequenza) EN55022 Classe A

**AVVERTENZA**: questo prodotto richiede cavi schermati per adeguarsi ai limiti di emissione per gli apparecchi di Classe A. Se non viene usato con cavi schermati, questo prodotto potrebbe causare radio interferenza, nel qual caso potrebbe richiedersi all'utente di prendere gli adeguati provvedimenti.

Immunità EN50082-1

**NORME DI SICUREZZA**

**AVVERTENZE ELETTRICHE**

**ATTENZIONE**: PERICOLO DI SCOSSE ELETTRICHE

Per evitare SCOSSE ELETTRICHE non asportare il coperchio. Le componenti interne non sono riparabili dall'utente. Questa unità ha TENSIONI PERICOLOSE e va aperta solamente da un tecnico specializzato e qualificato. Per evitare ogni possibilità di SCOSSE ELETTRICHE, interrompere l'alimentazione del dispositivo prima di collegare o staccare i cavi LAN.

**PERICOLO DI FULMINI**

**PERICOLO**: NON LAVORARE sul dispositivo o sui CAVI durante PRECIPITAZIONI TEMPORALESCHE.

**INSTALLAZIONE**

**ELETTRICITÀ—REGOLAZIONE AUTOMATICA DELLA TENSIONE**

Questo prodotto regolerà automaticamente la tensione ad un valore compreso nella gamma indicata sull'etichetta.

**ELETTRICITÀ—DISPOSITIVI DI CLASSE 1**

QUESTO DISPOSITIVO DEVE AVERE LA MESSA A TERRA. La spina deve essere inserita in una presa di corrente specificamente dotata di messa a terra. Una presa non cablata in maniera corretta rischia di scaricare una tensione pericolosa su parti metalliche accessibili.

**ELETTRICITÀ—AVVERTENZA SUL CAVO**

Usare un cavo della lunghezza massima di metri 4,5, con capacità minima di 6 A, 250 V, di filo HAR, dotato di connettore stampato IEC 320 ad un'estremità e di spina approvata dal paese di destinazione all'altra.

**ATTENZIONE**: le prese d'aria non vanno ostruite e devono consentire il libero ricircolo dell'aria ambiente per il raffreddamento.

**TEMPERATURA DI FUNZIONAMENTO**

Questo prodotto è concepito per una temperatura ambientale massima di 40 gradi centigradi.

**TUTTI I PAESI:** installare il prodotto in conformità delle vigenti normative elettriche nazionali.

**SIKKERHETSNORMER**: Dette produktet tilfredsstiller følgende sikkerhetsnormer.

**ADVARSEL**: Hvis dette produktet benyttes til privat bruk, kan produktet forårsake radioforstyrrelse. Hvis dette skjer, må brukeren ta de nødvendige forholdsregler.

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| RFI stråling | EN55022 Klasse A |

**ADVARSEL**: Det må benyttes isolerte kabler med dette produktet for å tilfredsstille Klasse A strålingsgrenser. Hvis ikke kan dette produktet forårsake radioforstyrrelse. Hvis dette skjer, må brukeren ta de nødvendige forholdsregler.

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| Immunitet | EN50082-1 |

**SIKKERHET**
**ELEKTRISITET**
**ADVARSEL**: FARE FOR ELEKTRISK SJOKK
For å unngå ELEKTRISK sjokk, må dekslet ikke tas av. Det finnes ingen deler som brukeren kan reparere på innsiden. Denne enheten inneholder FARLIGE SPENNINGER, og må kun åpnes av en faglig kvalifisert tekniker. For å unngå ELEKTRISK SJOKK må den elektriske strømmen til produktet være avslått før LAN-kablene til- eller frakobles.

**FARE FOR LYNNEDSLAG**
**FARE**: ARBEID IKKE på utstyr eller KABLER i TORDENVÆR.

**INSTALLASJON**

**ELEKTRISK—AUTO SPENNINGSTILPASNING**
Dette produktet vil automatisk bli tilpasset hvilken som helst strømspenning i de områdene som vises på etiketten.

**ELEKTRISK—TYPE 1- KLASSE UTSTYR**
DETTE UTSTYRET MÅ JORDES. Strømkontakten må være tilkoplet en korrekt jordet kontakt. En kontakt som ikke er korrekt jordet kan føre til farlig spenninger i lett t ilgjengelige metalldeler.

**ELEKTRISK—MEDDELELSE OM LEDNINGER**
Bruk en strømledning av maksimalt 4.5 m. i lengde, godkjent for minst av 6 amp, 250V, fremstilt av HAR ledning IEC 320 koplingsstykke i den ene enden, og i den andre enden en plugg som er blitt godkjent i brukerlandet.

**FORSIKTIG**: Lufteventilene må ikke blokkeres, og må ha fri tilgang til luft med romtemperatur for avkjøling.

**DRIFTSTEMPERATUR**
Dette produktet er konstruert for bruk i maksimum romtemperatur på 40 grader celsius.

**ALLE LAND**: Produktet må installeres i samsvar med de lokale og nasjonale elektriske koder.

**PADRÕES**: Este produto atende aos seguintes padrões.

**AVISO**: Num ambiente doméstico este produto pode causar interferência na radiorrecepção e, neste caso, pode ser necessário que o utente tome as medidas adequadas.

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| Emissão de interferência de radiofrequência | EN55022 Classe A |

**AVISO**: Este produto requer cabos protegidos a fim de obedecer aos limites de emissão da Classe A. Se não for utilizado com os cabos protegidos, este produto pode causar interferência na radiorrecepção e, neste caso, pode ser necessário que o utente tome as medidas adequadas.

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| Imunidade | EN50082-1 |

**SEGURANÇA**

**AVISOS SOBRE CARACTERÍSTICAS ELÉTRICAS**

**ATENÇÃO**: PERIGO DE CHOQUE ELÉTRICO

Para evitar CHOQUE ELÉTRICO, não retire a tampa. Não contém peças que possam ser consertadas pelo usuário. Este aparelho contém VOLTAGENS PERIGOSAS e só deve ser aberto por um técnico qualificado e treinado. Para evitar a possibilidade de CHOQUE ELÉTRICO, desconecte o aparelho da fonte de energia elétrica antes de conectar e desconectar os cabos da LAN.

**PERIGO DE CHOQUE CAUSADO POR RAIO**

**PERIGO**: NÃO TRABALHE no equipamento ou nos CABOS durante períodos suscetíveis a QUEDAS DE RAIO.

**INSTALAÇÃO**

**ELÉTRICO—AJUSTE AUTOMÁTICO DE VOLTAGEM**

Este produto ajustar-se-á automaticamente a qualquer voltagem que esteja dentro dos limites indicados no rótulo.

**ELÉTRICO—EQUIPAMENTOS DO TIPO CLASSE 1**

DEVE SER FEITA LIGAÇÃO DE FIO TERRA PARA ESTE EQUIPAMENTO. O plugue de alimentação deve ser conectado a uma tomada com adequada ligação de fio terra. Tomadas sem adequada ligação de fio terra podem transmitir voltagens perigosas a peças metálicas expostas.

**ELÉTRICO—AVISO SOBRE O CABO DE ALIMENTAÇÃO**

Use cabo de alimentação com comprimento máximo de 4,5 metros, com uma capacidade indicada mínima de 6 amp e 250 V, fabricado de material para cabo HAR com conector moldado IEC 320 em uma extremidade e, na outra extremidade, um plugue aprovado para uso no país em questão.

**CUIDADO**: As aberturas de ventilação não devem ser bloqueadas e devem ter acesso livre ao ar ambiente para arrefecimento adequado do aparelho.

**TEMPERATURA DE FUNCIONAMENTO**

Este produto foi projetado para uma temperatura ambiente máxima de 40 graus centígrados.

**TODOS OS PAÍSES:** Instale o produto de acordo com as normas nacionais e locais para instalações elétricas.

**ESTÁNDARES**: Este producto cumple con los siguientes estándares.

**ADVERTENCIA**: en un entorno doméstico, este producto puede causar radiointerferencias, en cuyo caso, puede requerirse del usuario que tome las medidas que sean convenientes al respecto.

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| Emisión RFI | EN55022 Clase A |

**ADVERTENCIA**: este producto requiere de cables armados para cumplir con los límites de emisión de Clase A. Si no se usa con cables armados, este producto puede causar radiointerferencias, en cuyo caso, puede requerirse del usuario que tome las medidas que sean convenientes al respecto.

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| Inmunidad | EN50082-1 |

**SEGURIDAD**
**AVISOS ELECTRICOS**
**ADVERTENCIA**: PELIGRO DE ELECTROCHOQUE
Para evitar un ELECTROCHOQUE, no quite la tapa. No hay ningún componente en el interior al cual puede prestar servicio el usuario. Esta unidad contiene VOLTAJES PELIGROSOS y sólo deberá abrirla un técnico entrenado y calificado. Para evitar la posibilidad de ELECTROCHOQUE desconecte la corriente eléctrica que llega al producto antes de conectar o desconectar los cables LAN.

**PELIGRO DE RAYOS**
**PELIGRO**: NO REALICE NINGUN TIPO DE TRABAJO O CONEXION en los equipos o en LOS CABLES durante TORMENTAS ELECTRICAS.

**INSTALACION**

**ELECTRICO—AUTO-AJUSTE DE TENSION**
Este producto se ajustará automáticamente a cualquier tensión entre los valores máximos y mínimos indicados en la etiqueta.

**ELECTRICO—EQUIPO DEL TIPO CLASE 1**
ESTE EQUIPO TIENE QUE TENER CONEXION A TIERRA. El cable tiene que conectarse a un enchufe a tierra debidamente instalado. Un enchufe que no está correctamente instalado podría ocasionar tensiones peligrosas en las partes metálicas que están expuestas.

**ELECTRICO—ADVERTENCIA SOBRE EL CABLE**
Use un cable eléctrico con un máximo de 4,5 metros de largo, con una capacidad mínima de 6 amperios, 250 V, hecho de cable HAR, con el conector moldeado IEC 320 en un extremo y con un enchufe que está aprobado por el país de uso final en el otro.

**ATENCION**: Las aberturas para ventilación no deberán bloquearse y deberán tener acceso libre al aire ambiental de la sala para su enfriamiento.

**TEMPERATURA REQUERIDA PARA LA OPERACIÓN**
Este producto está diseñado para una temperatura ambiental máxima de 40 grados C.

**PARA TODOS LOS PAÍSES**: Monte el producto de acuerdo con los Códigos Eléctricos locales y nacionales.

**STANDARDER**: Denna produkt uppfyller följande standarder.

**VARNING**: Denna produkt kan ge upphov till radiostörningar i hemmet, vilket kan tvinga användaren till att vidtaga erforderliga åtgärder.

| | |
|---|---|
| Radiostörning | EN55022 Klass A |

**VARNING**: Skärmkabel bör användas med denna produkt för att uppfylla kraven gällande radiostörningar enligt Klass A. Om ingen skärmkabel används med denna produkt, kan radiostörningar uppstå, vilket kan tvinga användaren till att vidtaga erforderliga åtgärder.

| | |
|---|---|
| Immunitet | EN50082-1 |

**SÄKERHET**

**TILLKÄNNAGIVANDEN BETRÄFFANDE ELEKTRICITETSRISK**:
RISK FÖR ELEKTRISK STÖTFör att undvika ELEKTRISK stöt, ta ej av locket. Det finns inga delar inuti som behöver underhållas. Denna apparat är under HÖGSPÄNNING och får endast öppnas av en utbildad kvalificerad tekniker. För att undvika ELEKTRISK STÖT, koppla ifrån produktens strömanslutning innan LAN-kablarna ansluts eller kopplas ur.

**FARA FÖR BLIXTNEDSLAG**
**FARA**: ARBETA EJ på utrustningen eller kablarna vid ÅSKVÄDER.

**INSTALLATION**

**ELEKTRISKT —AUTOMATISK SPÄNNINGSJUSTERING**
Denna produkt justeras automatiskt till alla spänningar inom omfånget som indikeras på produktens märkning.

**ELEKTRISKT—TYP KLASS 1 UTRUSTNING**
DENNA UTRUSTNING MÅSTE VARA JORDAD. Nätkabeln måste vara ansluten till ett ordentligt jordat uttag. Ett felaktigt uttag kan göra att närliggande metalldelar utsätts för högspänning. Apparaten skall anslutas till jordat uttag, när den ansluts till ett nätverk.

**ELEKTRISKT —ANMÄRKNING BETRÄFFANDE KABELN**
Använd en kabel med maximum längd 4,5 meter och minimum 6 amp nominal, 250V, av HAR kabelfabrikat med ett specialutformat IEC 320-kontaktdon i ena änden och i den andra en plugg som godkänts i landet där produkten används.

**VARNING**: Luftventilerna får ej blockeras och måste ha fri tillgång till omgivande rumsluft för avsvalning.

**DRIFTSTEMPERATUR**
Denna produkt är konstruerad för rumstemperatur ej överstigande 40 grader Celsius.

**ALLA LÄNDER**: Installera produkten i enlighet med lokala och statliga bestämmelser för elektrisk utrustning.

# Table of Contents

## Chapter 1

# Product Description

## Overview

This chapter describes the features of the AT-FS709 unmanaged Fast Ethernet switch, which includes:

- IEEE 802.3, IEEE 802.3u and IEEE 802.3x compliant
- Nine auto-negotiating 10/100 Mbps twisted pair RJ45 ports
- Store and forward switching at full-wire speed (14,880 packets per second on 10 Mbps ports and 148,800 packets per second on 100 Mbps ports)
- Media-dependent interface (MDI/MDI-X) button on Port 1 for hub or PC connection
- Support for up to 4K MAC addresses
- Internal power supply (100-240VAC)

This switch complements the other Allied Telesyn Fast Ethernet products, providing simple, cost-effective solutions for switching between 10 and 100 Mbps. Easy to install, simply plug in the power cord and connect your 10 or 100Base-TX station ports.

**Note**

For definitions of technical terms associated with Allied Telesyn's products, refer to the Glossary on Allied Telesyn's website at **www.alliedtelesyn.com**.

Figure 1 shows the switch front and rear panels.

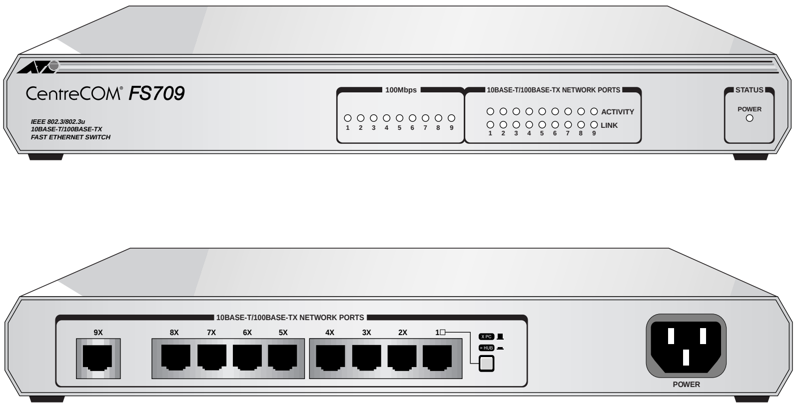



**Figure 1** AT-FS709 Front and Rear Panels

# Physical Description

## Connectors

Table 1 lists and defines the type of connectors available and their function.

**Table 1** Connector Types on Switch

| Connector Type | Function |
|---|---|
| Port 1<br>10/100Base-TX, RJ45 connector | Cascade or uplink port<br>Can also connect to a high-performance workstation, server or hub |
| Ports 2 through 9<br>10/100Base-TX, RJ45 connectors | Connect to a high-performance workstation, server or hub |

## Front Panel LEDs

Figure 2 illustrates the switch front panel LEDs. Table 2 lists and describes these LEDs.

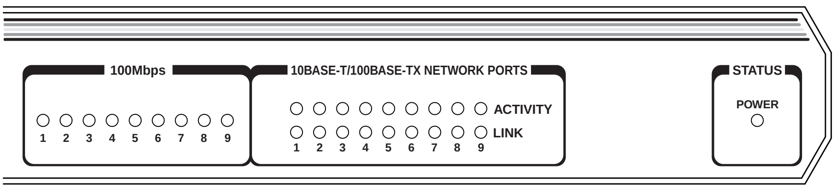



**Figure 2** A Close Up of the Front Panel LEDs

**Table 2** LED Status

| LEDs | Color | State | Description |
|---|---|---|---|
| 100 Mbps | GREEN | OFF<br>ON | Means the port connection speed is 10 Mbps<br>Means the port connection speed is 100 Mbps<br>Applies to all ports on the switch |
| LINK | GREEN | ON | Indicates a valid physical link on the port |
| ACTIVITY | GREEN | ON | Indicates data is being transmited |
| POWER | GREEN | OFF<br>ON | Means there is no power to the switch<br>Means there is power to the switch |

## MDI/MDI-X Button

Port 1 is associated with the MDI/MDI-X button, and is described in Table 3. The button gives you the flexibility to use a straight-through cable to connect to a hub or another switch, or to any DTE such as an end station or a server.

**Table 3** MDI/MDI-X Button Positions

| | Position | Label | Use |
|---|---|---|---|
| MDI | In  | = HUB | To connect a hub or another switch to the port |
| MDI-X | Out  | x PC | To connect a DTE to the port |

### Power Supply

The switch uses a 40W universal internal switching power supply with 100 to 120 VAC, or 200 to 240 VAC, 50/60 Hz input rating. The switch requires input of 100 to 240 VAC. Maximum power consumption is 20W. Allied Telesyn ships power cords with the units to the U.S., Continental Europe, and the U.K.

## Auto-Negotiation

Auto-negotiation is an optional function of the IEEE 802.3u Fast Ethernet standard that enables devices to automatically exchange information over a link about their speed and duplex abilities. This allows devices to perform automatic configurations to achieve the maximum common level of operation over a link.

All nine 10/100 Mbps ports on the switch are capable of auto-negotiation. This means these ports automatically adapt to the wire speed (10 or 100 Mbps) and duplex transmission (half- or full-) supported by the link without user reconfiguration.

*Chapter 2*

# *Installation*

## Before you Proceed

Before installing the switch, make sure you read “Electrical Safety and Installation Requirements,” page iii.

## Verifying Package Contents

Make sure that the package includes the following items:

- ❑ One AT-FS709 switch
- ❑ One AC power cord (for the U.S., Continental Europe, and the U.K. only)
- ❑ Warranty card
- ❑ This installation guide

If any of the above items is damaged or missing, contact your representative immediately.

## Site Requirements

Make sure you observe the following site requirements:

- ❑ Make sure you are placing the switch in a dust-free and moisture-free environment.
- ❑ Do not block ventilation openings on the unit.
- ❑ Make sure that the switch's power is accessible and cables can be connected easily.
- ❑ Cabling should be away from sources of electrical noise such as radios, transmitters, broadband amplifiers, power lines and fluorescent fixtures.
- ❑ Do not place objects on top of the switch.
- ❑ Use dedicated power circuits or power conditioners to supply power to the switch.

## Desktop Installation

1. Place the switch on a flat, level surface where power is easily accessible.
2. Attach one end of the power cord to the back of the switch and the other end to the power source. Make sure the **POWER** LED on the front panel lights green.
3. Attach the data cables and observe normal operation as indicated by the port LEDs. See Table 2 on page 3 for LED status.

**Note**

Do not plug a phone jack connector into any RJ45 port. This may damage the switch. Use only twisted-pair cables with RJ45 connectors that comform with FCC standards.

## Standalone Configuration

In a standalone configuration, the switch supports up to 9 network nodes. Figure 3 shows a 9-port switch connected to end stations and a server. The basic physical connection for this configuration requires connecting one of the switch's ports to the adapter card of an end station.

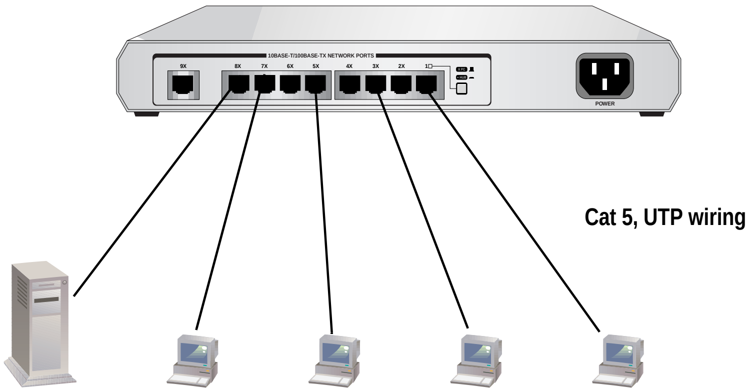



**Figure 3** AT-FS709 Connected to End Stations

## Cascade Configuration

Cascading means that two switches can be connected together using any of the switch ports, provided you maintain the same media type. Two switches can be cascaded to support multiple network port connections. Cable length to the nodes must follow the 100Base-TX cabling specifications.

To cascade installed switches, do the following:

**Note**

When cascading switches, you must use the same media type from port to port.

1. If you intend to use a port with the MDI/MDI-X button, set MDI/ MDI-X button to the To HUB position (in).

2. Use a straight-through UTP RJ45 cable to connect the first switch to the second switch. See Figure 4.

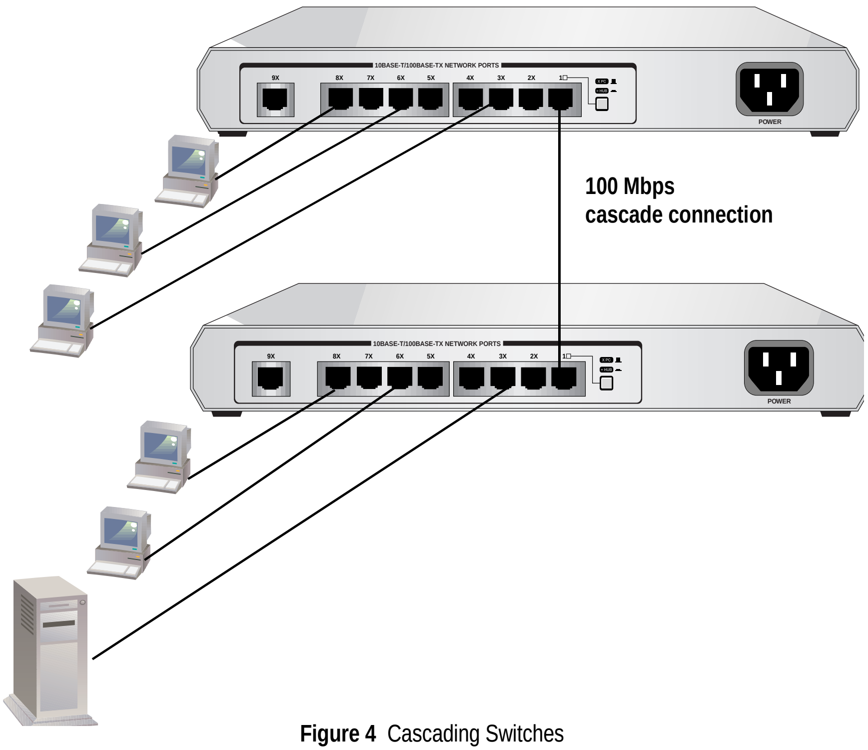



**Figure 4** Cascading Switches

3. Check the front panels to make sure that the green **POWER** LED lights.

## Uplink Configuration

For 100 Mbps connection to the backbone, set Port 1 to the **To Hub** position. Figure 5 illustrates how this switch can be used as an uplink to the backbone in a typical office complex using Category 5 UTP cable.

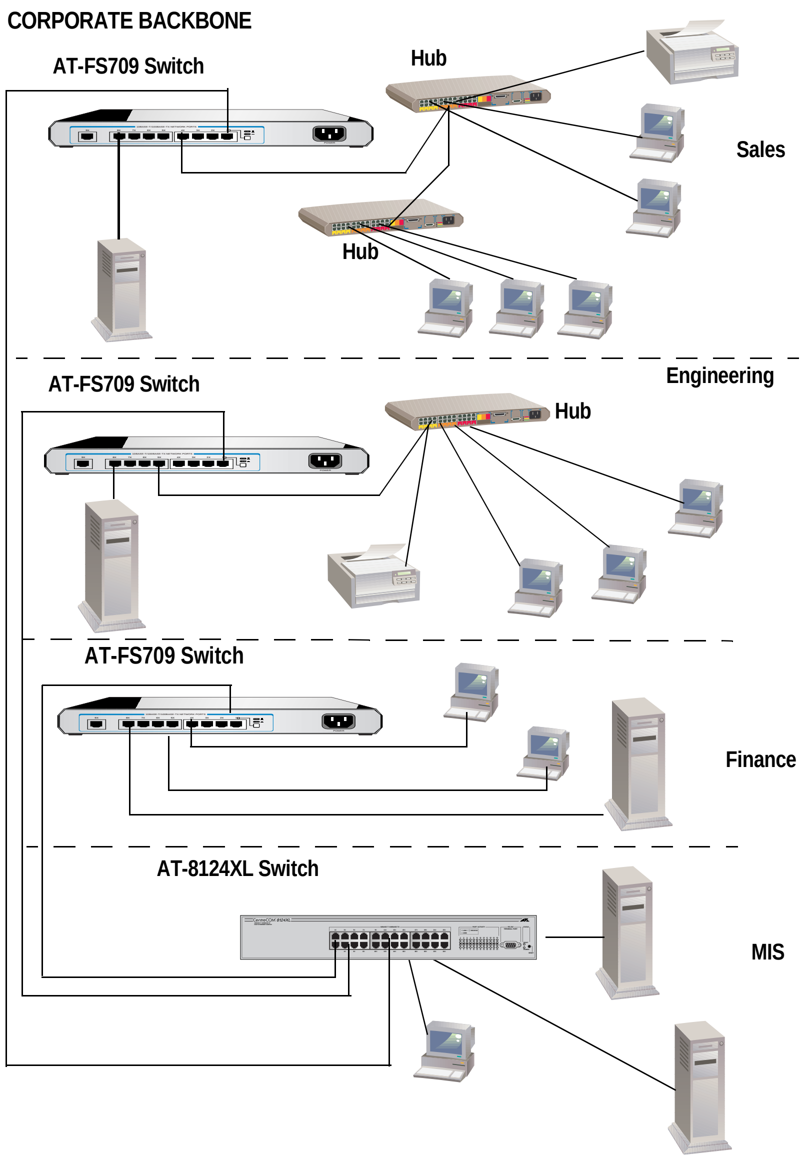



**Figure 5** AT-FS709 Switches Conected to the Backbone

## Appendix A

# Switch Specifications

### Physical Characteristics

| | |
|---|---|
| Chassis dimensions: | 12 in (L) x 7.2 in (W) x 1.5 in (H)<br>305 mm (L) x 182 mm (W) x 38 mm (H) |
| Weight: | 2.9 lbs (1.3 kg) |
| Operating temperatures: | 0° to 40° C |
| Storage temperatures: | -20° to 60° C |
| Relative humidity: | 10% to 80% (operating)<br>5% to 95% (storage) |
| Operating altitude: | Up to 10,000 ft (3,048 m) |

### Safety Agency

| | |
|---|---|
| Standard: | IEEE 802.3 10Base-T Ethernet<br>IEEE 802.3u, 100Base-TX Fast Ethernet<br>IEEE 802.3x |
| EMI/RFI: | Complies with FCC Class A,<br>EN55022 Class A |
| Safety: | Complies with safety standards UL 1950, 3rd Edition, TUV and EN60950 |
| Safety approval marks: | UL, CUL, TUV |
| Immunity: | Complies with EN50082-1 Immunity Standard, CE compliant |

## Network Specifications

Table 4 provides an overview of IEEE 802.3 and 802.3u specifications for 10Base-T and 100Base-TX network configurations using shielded twisted-pair wiring.

**Table 4** IEEE 802.3 and 802.3u Network Specifications

| | **10Base-T** | **100Base-TX** |
|---|---|---|
| Media | Shielded Twisted Pair Category 3 or 5 | Shielded Twisted Pair Category 5 only |
| Topology | Star, Tree | Star, Tree |
| External Devices | Network Adapter Card, Repeater | Network Adapter Card, Repeater |
| Maximum Segment Length | 328 ft (100 m) | 328 ft (100 m) |

## 100Base-TX Cable

There are various grades of voice-quality and data-quality cables available. These can appear to be similar externally, although their high-speed data transmission characteristics are radically different.

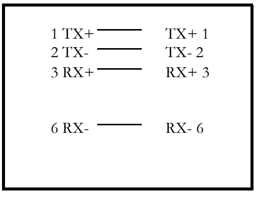
The identification problem is made worse by some suppliers selling voice-quality cables as data-quality cables.

If voice-quality cables are used in a 100Base-TX network system, data movement may be slow, collision-prone or non-existent. In addition, interface LEDs will usually indicate a valid link in such cases.

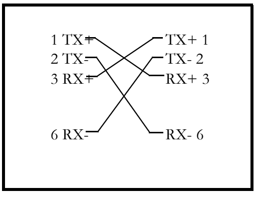
Category 5 is required cabling for use with 100Base-TX connections. Using any other category for a 100Base-TX connection may have high error rates and may not have the capacity to transmit data.

## 100Base-TX Connector Pinouts

### Straight-through Cable




### Crossover Cable



## *Appendix B*

# *Technical Support Fax Order*

**Name** ____________________________________________________________

**Company** ____________________________________________________________

**Address** ____________________________________________________________

**City** ______________________ **State/Province** ______________________

**Zip/Postal Code** ____________________ **Country** ______________________

**Phone** __________________________ **Fax** ______________________

## Incident Summary

**Model number of Allied Telesyn product I am using** ______________________

**Network software products I am using** ______________________

____________________________________________________________

**Brief summary of problem** ______________________

____________________________________________________________

**Conditions (List the steps that led up to the problem.)** ______________________

____________________________________________________________

____________________________________________________________

**Detailed description (Use separate sheet, if necessary)**

____________________________________________________________

____________________________________________________________

____________________________________________________________

**When completed, fax this sheet to the appropriate Allied Telesyn office. Fax numbers can be found on page 17.**

## Appendix C

# AT-FS709 Switch Installation Guide Feedback

Please tell us what additional information you would like to see discussed in the guide. If there are topics you would like information on that were not covered in the guide, please photocopy this page, answer the questions and fax or mail this form back to Allied Telesyn. The mailing address and fax number are at the bottom of the page. Your comments are valuable when we plan future revisions of the guide.

I found the following the most valuable ________________________________

________________________________________________________________

________________________________________________________________

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________________________________________________________________

I would like the following more developed ______________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

I would find the guide more useful if ___________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

Please fax or mail your feedback. Fax to 1-918-628-3222. Or mail to:
Allied Telesyn
c/o Technical Communications Department
950 Kifer Road
Sunnyvale, CA 94086 USA

# Appendix D
# Where To Find Us

| For Technical Support or Service | | |
|---|---|---|
| **Location** | **Phone** | **Fax** |
| **Americas**<br>United States, Canada, Mexico, Central America, South America | 1 (800) 428-4835 | 1 (918) 628-3222 |
| **Asia**<br>Singapore, Taiwan, Thailand, Malaysia, Indonesia, Korea, Philippines, China, India | (+65) 3815-613 | (+65) 3833-830 |
| **Australia**<br>Australia, New Zealand | (+61) 2-943-5111 | (+61) 2-9438-4966 |
| **France**<br>France, Belgium, Luxembourg, The Netherlands, Middle East, Africa | (+33) 1-60-92-15-32 | (+33) 1-69-28-37-49 |
| **Germany**<br>Germany, Switzerland, Austria, Eastern Europe | (+49) 30-435-900-126 | (+49) 30-435-70-650 |
| **Hong Kong** | (+852) 2-529-4111 | (+852) 2 529-7661 |
| **Italy**<br>Italy, Spain, Portugal, Greece, Turkey, Israel | (+39) 2-416047 | (+39) 2-419282 |
| **Japan** | (+81) 3-3443-5640 | (+81) 3-3443-2443 |
| **United Kingdom**<br>United Kingdom, Denmark, Norway, Sweden, Finland, Iceland | (+44) 1-235-442560 | (+44) 1-235-442490 |
| **Technical Bulletin Board Service** | 1 (425) 483-7979 | |
| **Technical Support E-mail Address** | TS1@alliedtelesyn.com | |
| **CompuServe** | Go ALLIED | |
| **FTP Server** | Address: gateway.centre.com [lowercase letters]<br>Login: anonymous [lowercase letters]<br>Password: your e-mail address [requested by the server at login] | |

| For Information Regarding Allied Telesyn International, Corp. | |
|---|---|
| **Allied Telesyn International, Corp.**<br>19015 North Creek Parkway<br>Bothell, WA 98011<br>Tel: 1 (425) 487-8880<br>Fax: 1 (425) 489-9191 | **Allied Telesyn International, Corp.**<br>950 Kifer Road<br>Sunnyvale, CA 94086<br>Tel: 1 (800) 424-4284 (USA and Canada)<br>Fax: 1 (408) 736-0100 |
| **World Wide Web** | http://www.alliedtelesyn.com |